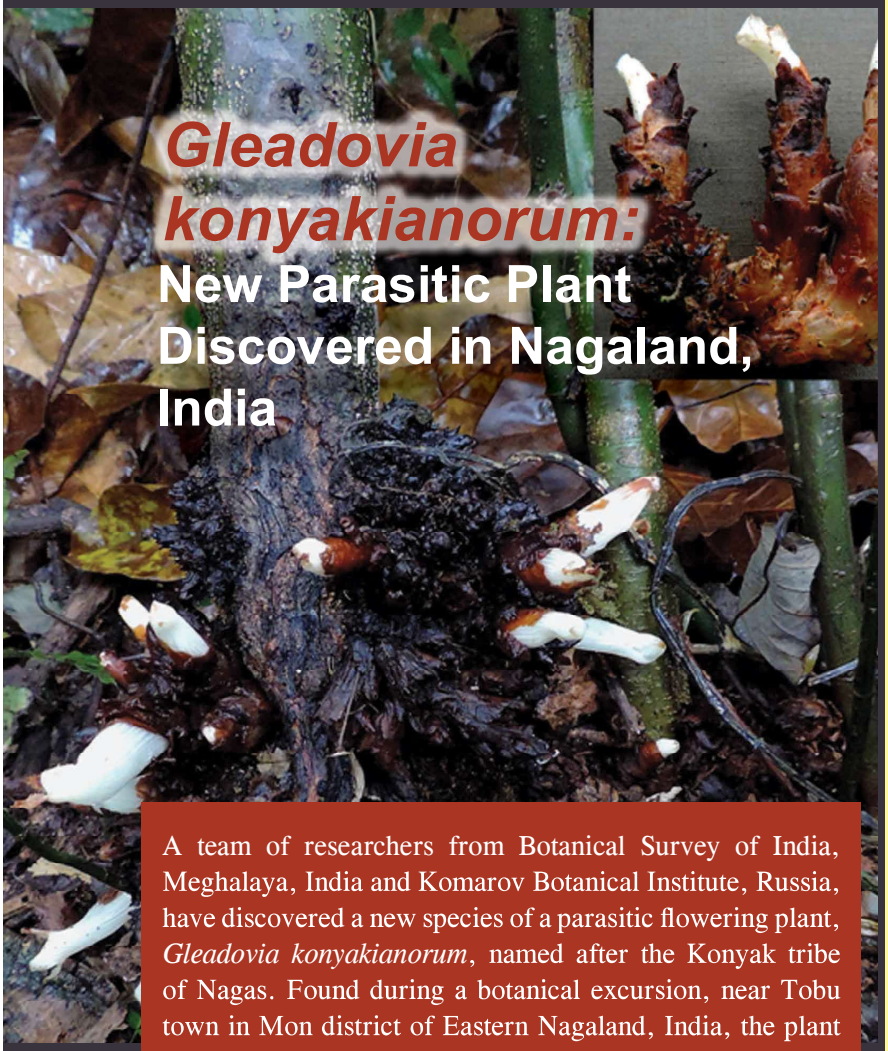

Gleadovia konyakianorum: New Parasitic Plant Discovered in Nagaland, India

A team of researchers from Botanical Survey of India, Meghalaya, India and Komarov Botanical Institute, Russia, have discovered a new species of a parasitic flowering plant, *Gleadovia konyakianorum*, named after the Konyak tribe of Nagas. Found during a botanical excursion, near Tobu town in Mon district of Eastern Nagaland, India, the plant has no chlorophyll and survives by feeding on other plant species having chlorophyll. This plant derives its complete nutrition from a host plant species, known as *Strobilanthes sp*. The plant has been discovered at an altitude of about 1500-1600 metres in the semi-evergreen forests of Eastern Nagaland, India.

Scientists published the description of the newly discovered plant in the journal *Phytotaxa* (2017, 326(4): 274-278). There are only three species in the genus *Gleadovia* reported in the literature. These are *G. ruborum* (found in India and China), *G. mupinense* (reported only in China) and *G. banerjiana* (India). The newly discovered species, *Gleadovia konyakianorum*, is distinct in appearance from all known species of the genus, *Gleadovia*. It strictly bears single-flowered inflorescence at stem apex. It is a white flowering, root parasite and can grow up to 10 cm in height. It bears white, tubular flowers and has been described as 'data deficient' by the IUCN Red List of Threatened Species.

According to the scientists, parasitic plants like this can also be called as curious plants, for the reason that they steal their entire nutrition from the host plants. Besides being rare, they are vital links in the plant kingdom, and they endorse Darwin's theory of the survival of the fittest.

Atmospheric Electrons: Possible Earthquake Precursors for Predicting Tremors

Predicting earthquakes with accuracy is an arduous task. Extensive work has been carried out in the past but with no success. A recent study was performed by the researchers from the Indian Institute of Remote Sensing, Dehradun and Indian Institute of Technology (IIT), Dhanbad, to understand a connection between electron content in the ionosphere (a part of earth's upper atmosphere) and earthquakes occurrences (*Quaternary International* 2017, 462: 65-74). Interestingly, it showed a positive correlation.

The research indicated that the total electron content of the ionosphere could be useful in predicting earthquakes. For ground to satellite communication and satellite navigation, total electron content is a critical factor. The total electron content is strongly affected by solar activity, and the change in the path and velocity of radio waves in the ionosphere has a considerable influence on the accuracy of satellite navigation. Since radio waves are affected by electrons, therefore, higher the number of electrons in the path of the radio wave, more will be the disturbance in the radio signal. In this way, a measure of the total electron content between a radio transmitter and receiver can be found.

The researchers collected data from ground satellites about different occurrences of earthquakes in the year 2015 viz. 1st April at Pipalkoti; 25-26 April at Nepal, and 12th May at Nepal. The team observed that during these shocks, the total electron content increased significantly in the ionosphere vertically above these sites. These variations were recorded even in low magnitude earthquakes. Moreover, these changes were noticeable even around eight days before the earthquakes.

One of the results revealed that as the distance between the recording station and the epicenter of the earthquake decreased, the total electron content variation increased. In conclusion, the investigation showed an interrelationship between total electron content values and the seismic events in the Himalayan region thus, suggesting the total electron content to be a possible earthquake precursor.